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JOINT COMMENTS OF THE ALLIANCE OF AUTOMOBILE MANUFACTURERS, AMERICAN HONDA MOTOR CO., INC., AND GENERAL MOTORS ON THE AMENDED SCOPING MEMO AND RULING OF THE ASSIGNED COMMISSIONER AND ADMINISTRATIVE LAW JUDGE

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I. INTRODUCTION AND BACKGROUND

The Alliance of Automobile Manufacturers, American Honda Motor Co., Inc., and General Motors (Joint Automakers) are pleased to have the opportunity to provide comments on the California Public Utilities Commission's (CPUC or the Commission) Amended Scoping Memo adding the transportation electrification issues contained in Senate Bill (SB) 350 to R.13-11-007. Together, the Joint Automakers represent thirteen different car and light truck manufacturers (American Honda Motor Co., Inc., BMW Group, FCA US Group LLC, Ford Motor Company, General Motors, Jaguar Land Rover, Mazda, Mercedes-Benz USA, Mitsubishi Motors, Porsche, Toyota, Volkswagen, and Volvo) collectively offering twenty-two plug-in electric vehicles (PEVs) in California currently, with several more coming. The Joint Automakers are resolutely committed to developing the market for PEVs and helping to realize the potential of vehicle-grid integration (VGI).

II. DISCUSSION

The Joint Automakers offer the following comments in response to the four questions outlined in the Amended Scoping Memo.

1. In what ways should the Application Guidance Straw Proposal in Appendix A of this Scoping Memo be modified to better align with the mandates of SB 350?

The Joint Automakers generally support the straw proposal. We encourage the Commission to more explicitly acknowledge the speed and scale of infrastructure deployment that is required to meet state goals. Public Utilities Code 740.12 requires the commission to "direct electrical corporations to file applications for programs and investments to accelerate widespread

transportation electrification to reduce dependence on petroleum, meet air quality standards, achieve the goals set forth in the Charge Ahead California Initiative….and reduce emissions of greenhouse gases." Given the transportation electrification goals referenced in this statutory language, as well as the milestones and timelines in the 2013 ZEV Action Plan, it is clear that swift action, pilot data collection, and larger scale programs are all needed. The National Renewable Energy Lab (NREL) conducted a study of charging infrastructure needs for the California Energy Commission in 2014, and while there is some disagreement among stakeholders about the current number of chargers in the state, the best available data suggests that there is a substantial infrastructure gap.[1] Achieving a penetration of EVSEs that will support the required penetration of PEVs will ultimately require additional model programs – significantly beyond those being tested in the Phase 1 vehicle-grid integration (VGI) pilots – that leverage the strengths and capabilities of all stakeholders, including utilities and electric vehicle service providers (EVSPs).

2. In light of current industry development and technology availability, should the Commission focus on particular transportation sectors or market barriers (e.g., light, medium or heavy duty vehicles, fuel types, or specific applications), and why?

While there is a need for Commission action in medium and heavy duty vehicles, it remains important for the Commission to continue to advance transportation electrification in the light duty vehicle market, where the majority of growth and GHG reductions will occur in the near-term. The Phase 1 VGI pilots are necessary to put the state on a path to meet its goals, but these pilots alone are not sufficient. The Commission should encourage the utilities to think creatively

[1] Melaina, Marc, Michael Helwig. (National Renewable Energy Laboratory). 2014. California Statewide Plug-In Electric Vehicle Infrastructure Assessment. California Energy Commission. Publication Number: CEC-600-2014-003. This study suggests that the target ratio of vehicles-to-non-residential chargers is between 4:1 and 8:1. The best publicly available data from the Department of Energy's Alternative Fuels Data Center (AFDC) suggests that the current ratio is closer to 18:1. We do not have extensive data on home charging (for single family homes or multi-unit dwellings) but we believe the target ratio of vehicles-to-chargers is much lower in these locations. An updated, more accurate, and more complete count of chargers statewide would help with infrastructure planning as it is generally acknowledged that the AFDC does not account for the full extent of nonresidential charging and does not capture home charging.

about additional ways to support transportation electrification in all markets. This includes rate design issues that are not addressed by the Phase 1 pilots such as simplifying residential PEV rates and demand charges that could limit charging in workplace, multi-unit dwelling, and DC fast charge locations. It will be important for the Commission to facilitate the integration of multiple overlapping transportation electrification programs and to look for potential synergies between programs and sectors (e.g. higher power DC Fast Charging investments that could benefit light duty vehicles as well as medium and heavy duty).

3. **What needs for standards development, research and development, or pilot projects exist that should be addressed by the Commission? What ongoing initiatives may be ready for increased scale?**

The Joint Automakers see several opportunities for additional pilot projects and ongoing initiatives that could be scaled up.

- **Deploy chargers in single family homes** – the Phase 1 VGI pilots focus on chargers in multi-unit dwellings, workplaces, and public locations (including DC Fast Charging in the PG&E application). This focus makes sense as these are important and often difficult locations for the deployment of chargers. However, more can and should be done to facilitate and accelerate deployment of chargers in all locations, including single-family homes. The Joint Automakers recommend investigating options to reduce the impact—both complexity and out-of-pocket expenses at the household level. These burdens act as a barrier that could be alleviated through utility programs. One option would be for the utility to provide rebates for home chargers and installation, perhaps contingent on participation in demand response or other vehicle-grid integration programs. For example, Michigan's Public Service Commission (MPSC) authorized DTE Energy, Consumer's Energy, and AEP Michigan to provide a $2,500 rebate to cover the cost of installing a residential 240V charge station to support PEV market development, reducing upfront costs for consumers and providing valuable data for the utilities. Another option

would be to consider turn-key solutions, e.g. monthly subscription models, that parallel industries such as cable TV or internet service. These models could certainly be explored for commercial programs as well.

- **Improve and simplify PEV rates to ensure both consumer and grid benefits –** In order to "accelerate widespread transportation electrification" as required by PU Code 740.12, it will be important for potential PEV drivers and fleet operators to have access to PEV-specific rates that are easily understood, provide cost savings relative to conventional (petroleum) fuels, and lay the foundation for vehicle-grid integration. Rates today are often confusing, may have cumbersome requirements that prevent initial sign-up, and in many cases do not lead to cost savings for PEV drivers. For example, residential tiered rates can push a PEV driver's marginal use into the highest tiers, negating the cost-savings benefit of charging at home. In addition, household time-of-use rates are complicated and can be unclear as to whether there are any savings (by changing the rates at which that the rest of the household is billed). A key benefit to PEV customers is being able to save money by charging when rates are lowest, but understanding and enrolling in the rate structures can be prohibitively difficult in some markets. Rates should be structured with both consumer and grid needs in mind so as to accelerate transportation electrification while also encouraging charging behaviors that benefit the grid. Thus, we believe additional attention is needed to both simplify the rates and better communicate them to ratepayers.
- **Leverage controlled charging (V1G) as storage –** Controlled charging of EVs, otherwise known as V1G, can provide nearly all of the same grid services as stationary storage, often at lower cost. However, the Commission declined in Decision 14-10-045 to make controlled charging an eligible resource for the 2014 solicitation. The Alliance of Automobile Manufacturers and American Honda Motor Co., Inc. filed joint comments in R.15-03-011 recommending that V1G be considered an eligible storage technology because of the grid benefits it can provide, the cost savings relative to other storage

technologies, and the potential benefits of providing a strong market signal for V1G. If the Commission does not make V1G eligible for the storage solicitations, we recommend pilot projects to collect data on real-world costs and benefits of V1G. Such pilots could ultimately provide data that supports V2G applications as well.

- **Conduct additional vehicle-grid integration pilots –** There are also opportunities to conduct targeted pilot programs that go beyond the vehicle-grid integration elements of the Phase 1 pilots. For example, a pilot could identify optimal sites for storage or demand response, place resources (potentially including DC Fast Charging) in a charging hub that could serve a dense urban area, or explore opportunities to utilize off-grid solar or storage technologies. The Open Vehicle Grid Integration Platform (OVGIP) is being evaluated by utilities, automakers, and EVSPs as a method for large-scale load management of EVs, and could potentially be incorporated into one or more pilot programs. Additionally, hydrogen vehicle technologies can be controllable grid assets and we see many opportunities to leverage hydrogen generation, compression, and storage technologies for both transportation electrification and grid benefits. Ultimately, electric and hydrogen vehicle technologies can play a significant role in the overarching strategy to integrate renewable energy generation and successfully manage grid demand.
- **Continue work on submetering –** Metering for PEVs presents cost challenges for utilities and customers. Rather than requiring expensive installation of submeters and cumbersome equipment at residences, utilities (working with the Commission) can consider innovative ways to use existing resources, such as EVSEs and vehicle data acquisition systems, as submeters. For example, vehicle meters could function as submeters to reduce the overall cost of metering VGI resources. With ubiquitous data collection and sensor technologies in vehicles, there could be better, more efficient and flexible ways to enable low cost data gathering. However, this would require consideration of flexibilities in the technical requirements for metering technologies.

Note that this is not an exhaustive list of pilot projects with the potential to accelerate

transportation electrification.

4. **What should the application guidance ruling consider about the issues raised in the ARB workgroup meeting of April 8, 2016, and the issues raised at the April 29, 2016 workshop?**

American Honda Motor Co., Inc. provided public comments at the April 29, 2016 workshop about the need for simpler EV rates that provide clear, easily-understood benefits to consumers. As discussed above, this is a priority and a key enabler for market acceptance of plug-in vehicles. Additionally, the Joint Automakers agree with the Assigned Commissioner that there is a potential role for the Commission and the utilities in facilitating the deployment of chargers in single family homes.

III. CONCLUSION

The Joint Automakers appreciate the opportunity to provide comments on the Amended Scoping Memo and Ruling of the Assigned Commissioner and Administrative Law Judge. We look forward to working with the commission to accelerate transportation electrification and fulfilling the directives of SB 350. We encourage the Commission to consider the necessary staffing to support the broad amount of work being completed at the Commission these days on transportation electrification.

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Respectfully submitted

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